

The allowance of claims 7 - 10 and the indication that claims 3, 5, 13 and 14 would be allowable if rewritten is noted and appreciated.

In response to the drawing objection, Fig. 2c has been amended to schematically show the eccentrically-mounted weight, indicated at 43, that is part of the shaker motor 42. Support for this is found in the specification at page 5, line 4. It is believed this conforms the drawings to show every feature of the claims without the addition of new matter. The corrections to the drawings are indicated in red. Formal drawings will be submitted upon the Examiner's approval of the drawing changes. The specification has similarly been amended to add reference numeral 43 to the description of the eccentrically-mounted weight, on page 5, line 4.

Regarding the §102 rejection of claims 1-2 and 6, applicant respectfully cannot agree that Moreira 5,422,570 teaches or suggests a motor which is activated in response to the DC control level voltage which voltage level is, in turn, proportional to the AC voltage input signal. It is pointed out that claim 1 calls for the motor to be activated in response to the DC control level voltage. Accordingly, the motor runs at a rate proportional to the AC voltage input signal. This is also called for in claim 1. A motor running at a rate proportional to the AC voltage input signal is not found in Moreira '570.

In Moreira '570 the motor 56 runs at a rate governed by a user defined speed signal. A microprocessor 64 determines the actual motor speed signal 68 and then compares the actual motor speed signal to the user command speed signal 66. If the actual motor speed signal 68 is not correct, then a suitable drive circuit 74 applies a pulse width modulated (PWM) signal to a three-phase inverter 54 which supplies currents i_a , i_b and i_c (schematically shown in Fig. 2) to the stator windings of the motor (Column 7, lines 17-35). Thus, the voltage supplied to the

motor is not controlled by an AC voltage input signal, it is controlled by a user defined setting.

This is confirmed at Figs. 15-17 which applies the motor arrangement in Moreira to a refrigerator and a clothes drier. It is noted that the motors in each of these must operate according to preset user defined preferences and not according to an AC voltage input signal (column 15, lines 20-66). As such, the voltage levels in Moreira are controlled by such preset user preferences and modified if the actual motor speed deviates from the desired speed. None of the voltages are related to an external voltage level. Thus, Moreira '570 does not perform in the manner described in the present invention and as called for in claim 1.

With regard to claim 2, the motor drive circuit 74 in Moreira '570 is not responsive to the DC control level voltage. Rather, Moreira's circuit is entirely responsive to the user selected motor speed signal 66. Moreira's circuit alters the drive voltage based on differences between the actual motor speed signal 68 and the user command motor speed signal 66. This is not a teaching of the subject of claim 2.

As to the rejection of claim 11 as obvious over Shirai 5,349,289 in view of Luebke 5,877,618, it is respectfully requested that these references lack a teaching or suggestion for the invention of claim 11. The Examiner's reasons for rejection were based on the absence of "non-contact." It is respectfully believed that the meaning of "non-contact" is already incorporated into the claim. Claim 11 recites an electrical test instrument having both a clamp-like and a blade-type formation. The claimed electrical circuit is in electrical communication with a sensor embedded in the blade and detects the presence of a voltage when the blade is placed near the voltage to be tested. It is noted that a non-contact sensor is one which detects the presence of a

nearby voltage. This description is included in claim 11. In this way, it is respectfully believed that a non-contact sensor has already been described by the claimed language.

The Examiner's reasons for rejection further state that the proper test for obviousness is not based on the physical combination of the references. Instead, the references must teach or suggest the combination. Applicants agree and respectfully submit that the cited references do not suggest claim 11 without the teachings provided by the applicants' disclosure.

In any determination of obviousness, one cannot overestimate the suggestions provided by the references. Shirai '289 describes a clamp-on multimeter having clamp cores 14a and 14b which clamp onto a conductor. See Col. 2, lines 59-65; Col. 3, lines 17-19; and Col. 4, lines 34-38. The improvement in Shirai is solely directed to a clamp-on multimeter which measures several elements of the conductor at once. It is noted that throughout the specification Shirai '289 teaches a clamp which must be opened and closed in order to place the conductor in contact with the clamp meter. Shirai '289 does not teach a non-contact voltage sensor. Nor does it suggest one. Luebke '618 discloses a "pen-like pocket held" tester. See Col. 1, lines 20 and 44-45. Luebke '618 has non-contact sensor but in a completely different character of tester than the clamp meter disclosed in Shirai '289.

It would not be obvious to combine the probe 26 of Luebke with the jaws 14a, 14b of Shirai for two reasons. First, nothing in the cited references suggests making the hypothetical combination. Each of Shirai '289 and Luebke '618 discloses a different testing device. Why should either one need the testing device disclosed by the other? Clearly it does not. Neither reference contains any hint that Shirai's and Luebke's different testing devices should be combined in any manner whatsoever. In fact, it is respectfully submitted that the references teach

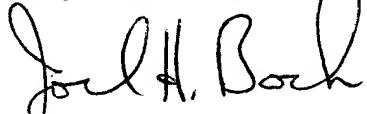
away from any combination. The clamp meter in Shirai '289 requires contact with the conductor while the Luebke's tester has a non-contact sensor. In this way, it would be counterintuitive to modify Shirai's clamp meter to include a non-contact sensor and vice versa for Luebke's tester. The only source of such combination is taught by applicants' disclosure which cannot render the claimed invention obvious.

Second, the hypothetical combination would defeat the desired characteristics of Luebke, namely, a tester that is shaped like a pen so that it fits easily in a user's pocket. The shape and orientation of Luebke's tester teaches away from adding the clamping core elements 14a and 14b such as those disclosed in Shirai's clamp meter. This would make Luebke's pen-like, pocket tester unnecessarily bulky. In addition, Luebke discloses that the tester requires no additional effort to orient the probe tip 26 within the opening of the outlet for non-contact testing. See Col. 3, lines 15-19. This is contrary to Shirai's clamp meter which requires relative movement of the clamp cores 14a and 14b to position the clamp around the conductor. Luebke teaches against a testing device which requires movement, and so would avoid Shirai's clamp meter. For these reasons, it would not be obvious to combine these references in the absence of applicants' disclosure. Reconsideration of the rejection of claim 11 is requested.

Claim 12 is allowable along with independent claim 11 and for the additional reasons set forth above with respect to claim 1. That is, even if a combination of Shirai, Luebke, and Moreira were made, the resulting structure would not have a motor driving an eccentrically-mounted weight at a rate proportional to the AC input voltage signal. A device resulting from the combination of those three references would drive a motor at a rate selected by the user.

It is submitted that the above amendments place the application in condition for allowance. Accordingly, the application is resubmitted for reconsideration. A favorable action is respectfully requested.

Respectfully submitted,



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Marked up Copy of Specification Showing Changes Made

On page 5, in the paragraph beginning on line 3, amend the paragraph to read as follows:

The motor drive circuit 40 powers a shaker motor 42. The motor is a 1.5 volt DC motor that includes an eccentrically-mounted weight 43. The spinning weight produces a vibration that can be felt by a user holding the test instrument. Such motors are typically found in pagers. The faster the motor turns the greater is the intensity of the vibration. Thus, since the motor speed in the present invention varies with the AC input voltage level, the resulting vibration intensity can give an approximation of the AC voltage level. That is, the user will be able to feel the difference between high and low voltages. Since the motor is designed to operate at 1.5 VDC and the battery typically used in test instruments is a nominal 9 volt battery, the motor drive circuit 40 is used to efficiently drop the voltage supplied to the motor 42 without unnecessarily draining the battery. In this sense the motor drive circuit is sometimes referred to as a chopper or switching circuit. The drive circuit will apply 1.5 volts to the motor during the time or width of each “on” pulse coming from NAND gate 36. When each “on” pulse ends, the power to the motor shuts off, although the motor will not necessarily stop spinning before the next pulse begins. The average speed of the motor depends on the pulse frequency which depends on the DC control level voltage which in turn depends on the AC input voltage. Thus, the motor speed, and therefore the vibration intensity, depends on the level of the AC input voltage.